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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/572,695

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David Lowell Mcneely

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Joseph J. Laks

Thomson Licensing LLC

2 Independence Way, Patent Operations

PO Box 5312

PRINCETON, NJ 08543

EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT

PAPER NUMBER

2611

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/572,695	<b>Applicant(s)</b> MCNEELY, DAVID LOWELL	
	<b>Examiner</b> Qutbuddin Ghulamali	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

1. This office action is in response to remarks filed 04/07/2008.

### ***Response to Remarks***

2. Applicant's remarks, see pages 5-7, filed 04/07/2008, with respect to the rejection(s) of claim(s) 1-8, 17-20 under 35 U.S.C. 102 (b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found art. The rejection based on the new art follows.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van de Kerkhof (USP 5,995,493) in view of Ishizu (USP 5,757,862).

Regarding claim 1, Van de Kerkhof discloses

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a digital radio frequency circuit comprising: circuitry (A/D, 4) that produces a first sample data modulated signal having a first frequency and a first sample data clock rate (first sampling frequency  $fs_1$ ) (col. 3, lines 10-15);

an up-sampler modulator (22) that receives the first sample data modulated signal and produces a second sample data modulated signal having a second frequency (24) and a second sample data clock rate (the upsampler samples the signal applied to its input by a factor of 2) (col. 3, lines 36-45); and

circuitry (34, 20) that receives the first sample data modulated signal and the second sample data modulated signal and delivers one of the first sample data modulated signal second sample data modulated signal for further processing (the filter 28 has the function to predict at least a component of the digital information signal supplied to input terminal 1 in response to signal applied to its input terminal 26) (col. 3, lines 59-67; col. 4, lines 15-67). Van de Kerkhof however, does not explicitly disclose circuitry that receives the first and the second modulated signal delivers one of the modulated signal depending on which sample data modulated signal exhibits desirable characteristics for a given operating environment. However, Ishizu in a similar field of endeavor discloses selector (fig. 2, element 24) selecting one of the modulated signal that exhibits desirable parameter/characteristics (col. 1, lines 38-60; col. 5, lines 7-22, 48-67; col. 6, lines 11-18, 37-67; col. 7, lines 28-54, 62-67; col. 8, lines 10-20). It would have been obvious to a person of ordinary skill in the art at the time the invention was made for circuitry to deliver one of the modulated signal for further processing depending which sample data is selected as taught by Ishizu in the system of Van de Kerkhof because it can allow

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operation of the circuitry which can improving signal to noise ratio without performing high speed signal processing at low power because for example the decimation circuit can be clocked by a low frequency clock signal (normally about one fourth of the symbol frequency).

As per claim 2, Van de Kerkhof discloses a first filter having a low pass filtering characteristics that receives the first sample data ( $fs_1$ ), and a second filter as having the characteristic to predict the second sample data (col. 3, lines 21-31, 59-65; col. 4, lines 3-14; col. 5, lines 40-54).

Regarding claims 3, 6, 18, 19, Van de Kerkhof discloses the first filter (8) and a second filter (28) as filters that can be adapted to generate filter coefficients and can be used in an adaptive form differently from each other and use of FIR filters is well known in the art.

Regarding claim 4, Van de Kerkhof discloses a sampling frequency where  $fs_2 = fs_1/2$  (col. 3, lines 26-31).

As to claim 5, Van de Kerkhof discloses the output of the first filter (8) and the output of the second filter (28) are delivered to the circuitry ((34, 20) that receives the first sample data modulated signal and the second sample data modulated signal (col. 3, lines 19-31; col. 4, lines 3-34).

Regarding claim 7 Van de Kerkhof discloses a sampling rate of  $fs_1$  samples per second assumed to be 192 kHz in the example shown (col. 4, lines 15-25) and a low filtered version of  $fs_1/2$  of 96 kHz. However, the changes in size/proportion in the instant case of 80 MSps and 160 MSps is not sufficient to patentably distinguish over

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the prior art, see *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (Claims directed to a lumber package “of appreciable size and weight requiring handling by a lift truck” where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) (“mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled.” 531 F.2d at 1053, 189 USPQ at 148.).

In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Regarding claim 8, Van de Kerkhof discloses all limitations of the claim except does not explicitly disclose RF circuit comprise orthogonal frequency division multiplexing (OFDM). However, Ishizu in a similar field of endeavor discloses digital receiver for multicarrier signals utilizes orthogonal signals which can be then be transmitted as such (col. 8, lines 1-9). It would have been obvious to a person skilled in the art at the time the invention was made to use complex orthogonal means to represent signals as orthogonal in transmission as taught by Ishizu in the circuit of Van de Kerkhof because it can improve synchronizing and reproduction of a received data

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signal more efficiently and consequently, improve the accuracy for accomplishing orthogonal detection of the quasi-coherent detected in-phase signal  $I_{\text{sub.QC}}(nT)$  and the amplitude of the quasi-coherent detected quadrature-phase signal  $Q_{\text{sub.QC}}(nT)$ .

As per claim 17, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claimed above and therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to represent the claim in an alternate way so as to realize steps of the method as claimed, considering the aforementioned rejection for the apparatus claim 1.

As to claim 20, the steps recited are in order.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutbuddin Ghulamali whose telephone number is (571)-272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.

July 5, 2008.

/Chieh M. Fan/

Supervisory Patent Examiner, Art Unit 2611